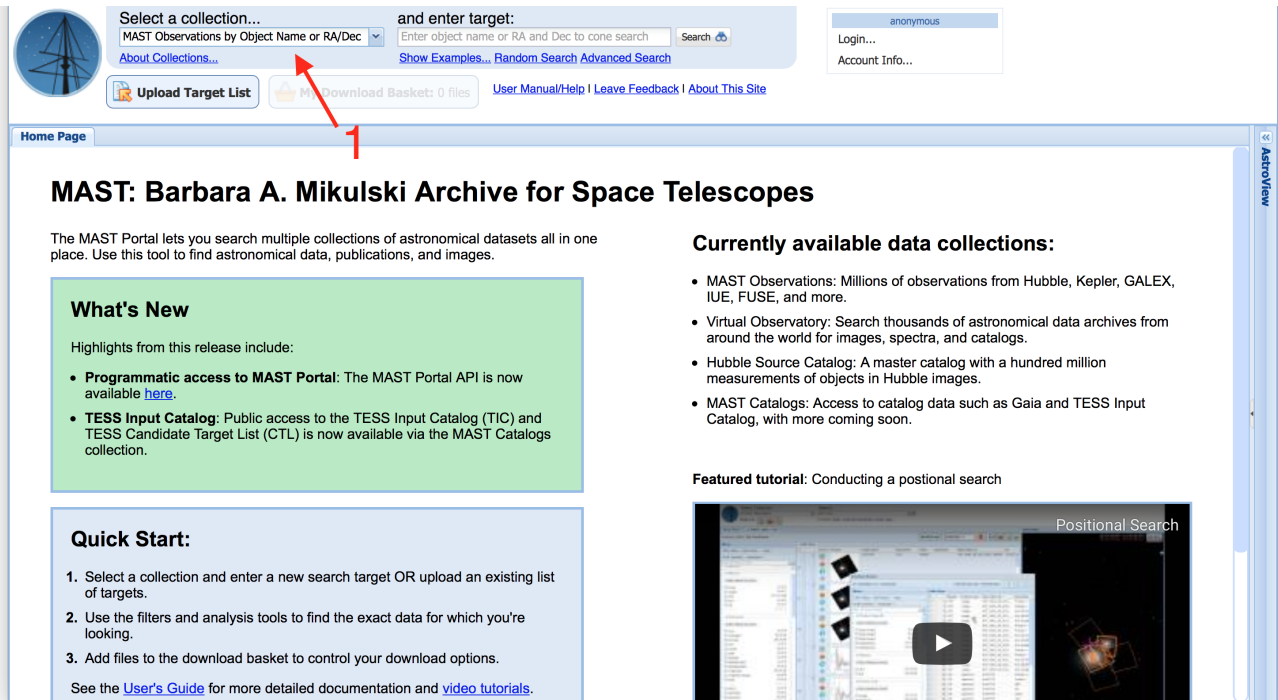


6.0.2 - Search the exoCTL centered on K2 Campaign 2.

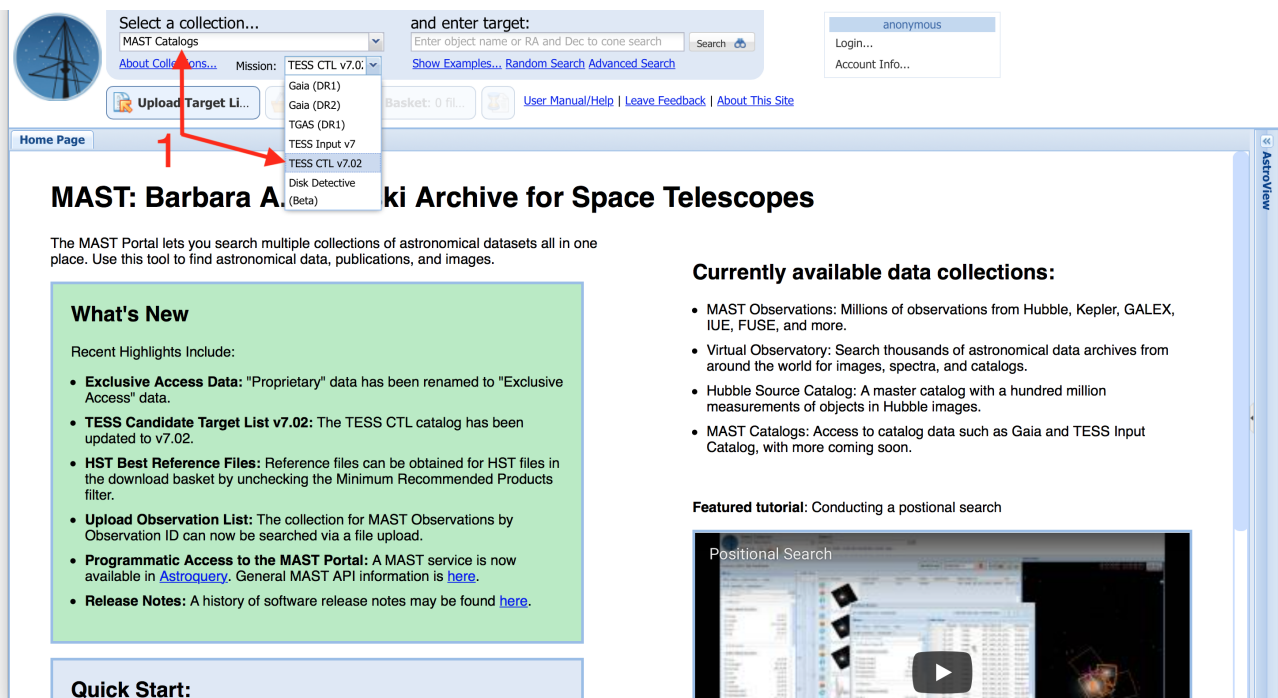
This tutorial will show you how to do a search on a single coordinate, within the TESS Exoplanet Candidate Target List (exoCTL) in the [MAST Portal](#). Specifically, we will do a search centered on the K2 Campaign 2 field.

Step 1 - Select Collection: Upon visiting the MAST Portal, the first step is to change the collection of data we are searching in from the Context menu (**Item #1**) at the top left.



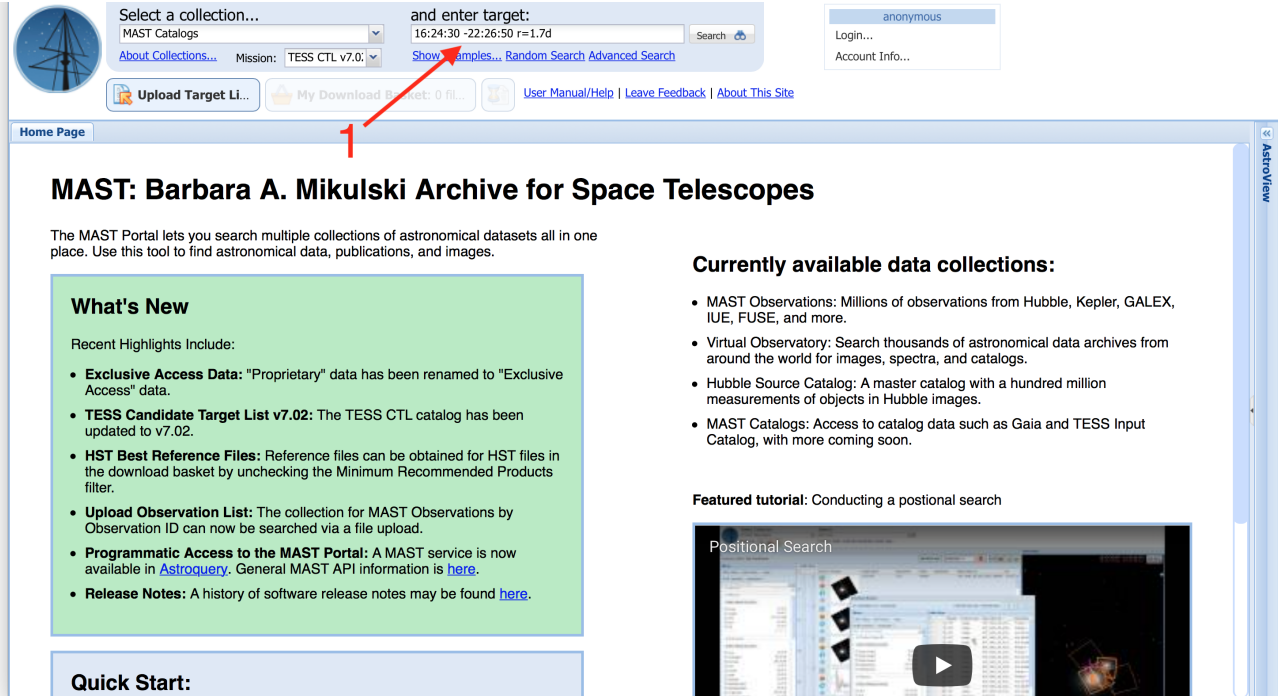
The screenshot shows the MAST Portal homepage. At the top left, there is a dropdown menu labeled 'Select a collection...' with 'MAST Observations by Object Name or RA/Dec' selected. A red arrow points to this dropdown menu, labeled with a red '1'. To the right of the dropdown is a search bar labeled 'and enter target:' with a 'Search' button. Below the search bar are links for 'About Collections...', 'Show Examples...', 'Random Search', and 'Advanced Search'. There are also buttons for 'Upload Target List' and 'Download Basket: 0 files'. The main content area has a header 'MAST: Barbara A. Mikulski Archive for Space Telescopes' and a sub-header 'The MAST Portal lets you search multiple collections of astronomical datasets all in one place. Use this tool to find astronomical data, publications, and images.' Below this is a 'What's New' section with highlights from the release, including 'Programmatic access to MAST Portal' and 'TESS Input Catalog'. There is also a 'Quick Start' section with three steps. On the right, there is a 'Currently available data collections:' section with a list of collections and a 'Featured tutorial: Conducting a postional search' section with a video player.

Step 2 - Select TESS xCTL: From the Context drop-down menu, select **MAST Catalogs**, then, in the Mission drop-down menu that appears (**Item #1**), select **TESS CTL v7.02** for the exoCTL list. Note that the version number will change as newer editions replace older ones in the Portal.



The screenshot shows the MAST Portal homepage with the 'Select a collection...' dropdown menu open. The dropdown menu shows 'MAST Catalogs' selected. Below it, there is a 'Mission:' dropdown menu with 'TESS CTL v7.02' highlighted. A red arrow points to the 'MAST Catalogs' option in the dropdown menu, labeled with a red '1'. The rest of the page content is the same as the previous screenshot, including the search bar, 'Upload Target List' button, 'What's New' section, 'Quick Start' section, 'Currently available data collections:' section, and 'Featured tutorial: Conducting a postional search' section.

Step 3 - Enter Coordinates For Query: We are now ready to do a target search by entering text into the Search Box (**Item #1**). The Search Box can accept coordinates in either decimal degrees or in sexagesimal format. You can specify a search radius by adding $r =$ and then your desired radius. For example, $r = 0.3d$ is a 0.3 degree search radius, $r = 5m$ is a 5 arcminute search radius, and $r = 3s$ is a 3 arcsecond search radius. For our example, we'll search on the K2 Campaign 2 field center located at **16:24:30 -22:26:50** with a search radius of **1.7d**, which is roughly the size of a Kepler module. Note that this search may take a while, since searches with radii larger than a degree typically return a lot of rows.



Select a collection...
MAST Catalogs

and enter target:
16:24:30 -22:26:50 r=1.7d

Search

Upload Target List

My Download Basket: 0 files

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MAST: Barbara A. Mikulski Archive for Space Telescopes

The MAST Portal lets you search multiple collections of astronomical datasets all in one place. Use this tool to find astronomical data, publications, and images.

What's New

Recent Highlights Include:

- Exclusive Access Data:** "Proprietary" data has been renamed to "Exclusive Access" data.
- TESS Candidate Target List v7.02:** The TESS CTL catalog has been updated to v7.02.
- HST Best Reference Files:** Reference files can be obtained for HST files in the download basket by unchecking the Minimum Recommended Products filter.
- Upload Observation List:** The collection for MAST Observations by Observation ID can now be searched via a file upload.
- Programmatic Access to the MAST Portal:** A MAST service is now available in [Astroquery](#). General MAST API information is [here](#).
- Release Notes:** A history of software release notes may be found [here](#).

Quick Start:

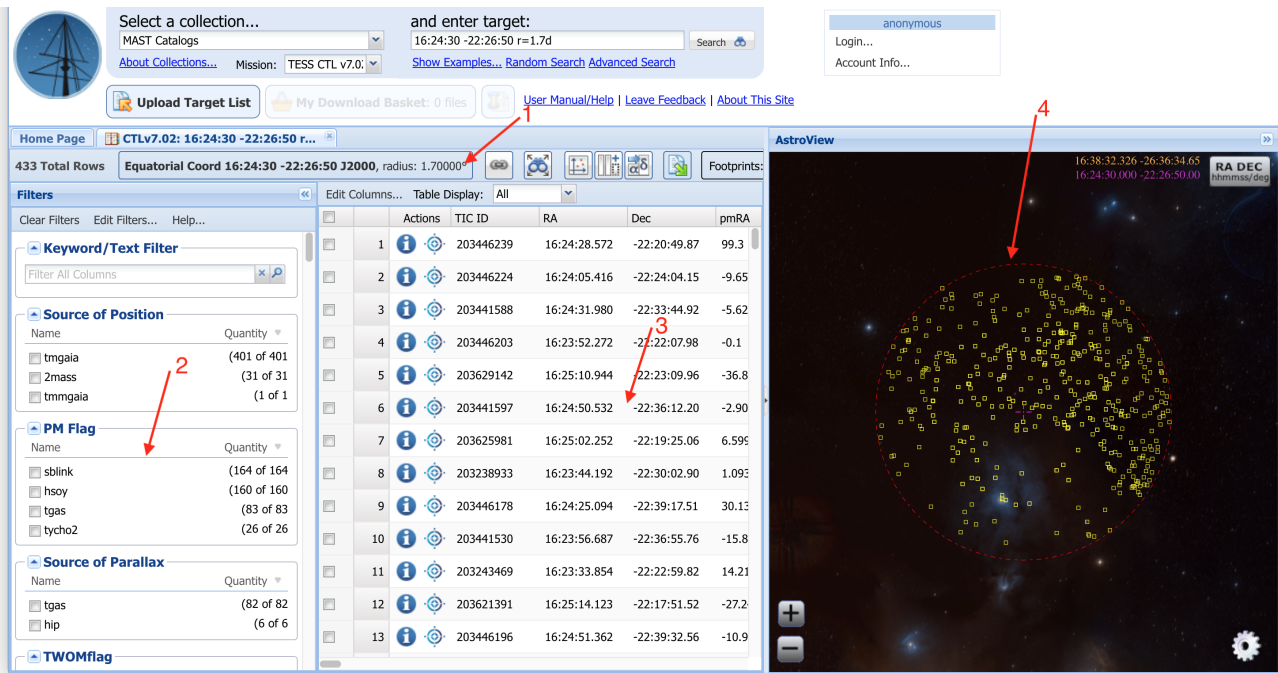
Currently available data collections:

- MAST Observations: Millions of observations from Hubble, Kepler, GALEX, IUE, FUSE, and more.
- Virtual Observatory: Search thousands of astronomical data archives from around the world for images, spectra, and catalogs.
- Hubble Source Catalog: A master catalog with a hundred million measurements of objects in Hubble images.
- MAST Catalogs: Access to catalog data such as Gaia and TESS Input Catalog, with more coming soon.

Featured tutorial: Conducting a positional search

Positional Search

Step 4 - Understanding The Search Results: We now see the results of our search. First, note that the search radius we specified is reported back to us in the query translation button (**Item #1**). The search results area has three main panels, on the left is the Filters panel (**Item #2**), where you can select subsets of your returned rows by filtering column values. In the middle is the Search Results Grid (**Item #3**), which contains the table of results itself (hint: columns can be sorted by clicking on the headers). On the right is the AstroViewer (**Item #4**), which is a 3D sky map that will overplot the footprints of observations or catalog objects from your search results, and offers a wide range of background images from surveys that span the electromagnetic spectrum from X-rays to the radio. We can see all the TIC sources in our 1.7 degree search radius quite clearly.



Select a collection...
MAST Catalogs

and enter target:
16:24:30 -22:26:50 r=1.7d

Search

Upload Target List

My Download Basket: 0 files

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Home Page

CTLv7.02: 16:24:30 -22:26:50 r=1.7d

433 Total Rows

Equatorial Coord 16:24:30 -22:26:50 J2000, radius: 1.70000

Footprints:

Filters

Clear Filters Edit Filters... Help...

Keyword/Text Filter

Filter All Columns

Source of Position

Name Quantity

- tmgaia (401 of 401)
- 2mass (31 of 31)
- trmgala (1 of 1)

PM Flag

Name Quantity

- sblink (164 of 164)
- hsoy (160 of 160)
- tgas (83 of 83)
- tycho2 (26 of 26)

Source of Parallax

Name Quantity

- tgas (82 of 82)
- hip (6 of 6)

TWOMflag

Search Results Grid

	Actions	TIC ID	RA	Dec	pmRA
1		203446239	16:24:28.572	-22:20:49.87	99.3
2		203446224	16:24:05.416	-22:23:04.15	-9.65
3		203441588	16:24:31.980	-22:33:44.92	-5.62
4		203446203	16:23:52.272	-22:22:07.98	-0.1
5		203629142	16:25:10.944	-22:23:09.96	-36.8
6		203441597	16:24:50.532	-22:36:12.20	-2.90
7		203625981	16:25:02.252	-22:19:25.06	6.595
8		203238933	16:23:44.192	-22:30:02.90	1.093
9		203446178	16:24:25.094	-22:39:17.51	30.13
10		203441530	16:23:56.687	-22:36:55.76	-15.8
11		203243469	16:23:33.854	-22:22:59.82	14.21
12		203621391	16:25:14.123	-22:17:51.52	-27.2
13		203446196	16:24:51.362	-22:39:32.56	-10.9

AstroViewer

16:38:32.326 -26:36:34.65
16:24:30.000 -22:26:50.00

RA DEC
hh:mm:ss/deg

Step 5 - Save Your Results: You can save the search results at any time using the Export Button (**Item #1**). From the dialog menu that appears, you'll be able to select the format of your output file and whether you want to export all the available columns in the catalog, or only those that are currently displayed in the Search Results Grid.



Select a collection...
MAST Catalogs
[About Collections...](#) Mission: TESS CTL v7.0
[Upload Target List](#) [My Download Basket: 0 files](#)

and enter target:
16:24:30 -22:26:50 r=1.7d
[Show Examples...](#) [Random Search](#) [Advanced Search](#)

anonymous
Login...
Account Info...

[Home Page](#) [CTLv7.02: 16:24:30 -22:26:50 r...](#)
433 Total Rows Equatorial Coord 16:24:30 -22:26:50 J2000, radius: 1.70000°
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Filters

Clear Filters Edit Filters... Help...

Keyword/Text Filter

Filter All Columns

Source of Position

Name

Quantity

tmgala

(401 of 401)

2mass

(31 of 31)

tmgala

(1 of 1)

PM Flag

Name

Quantity

sblink

(164 of 164)

hsoy

(160 of 160)

tgas

(83 of 83)

tycho2

(26 of 26)

Source of Parallax

Name

Quantity

tgas

(82 of 82)

hip

(6 of 6)

TWOMflag

Edit Columns...

Table Display: All

	Actions	TIC ID	RA	Dec	pmRA
☐		203446239	16:24:28.572	-22:20:49.87	99.3
☐		203446224	16:24:05.416	-22:24:04.15	-9.65
☐		203441588	16:24:31.980	-22:33:44.92	-5.62
☐		203446203	16:23:52.272	-22:22:07.98	-0.1
☐		203629142	16:25:10.944	-22:23:09.96	-36.8
☐		203441597	16:24:50.532	-22:36:12.20	-2.90
☐		203625981	16:25:02.252	-22:19:25.06	6.595
☐		203238933	16:23:44.192	-22:30:02.90	1.093
☐		203446178	16:24:25.094	-22:39:17.51	30.13
☐		203441530	16:23:56.687	-22:36:55.76	-15.8
☐		203243469	16:23:33.854	-22:22:59.82	14.21
☐		203621391	16:25:14.123	-22:17:51.52	-27.2
☐		203446196	16:24:51.362	-22:39:32.56	-10.9

AstroView

16:38:32.326 -26:36:34.65
16:24:30.000 -22:26:50.00 RA DEC
hh:mm:ss/deg



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